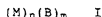


We claim:

1. The use of α -lipoic acid or α -dihydrolipoic acid for
5 increasing the bioavailability of mineral salts.
2. The use as claimed in claim 1, wherein at least one mineral
salt is used in combination with α -lipoic acid or
 α -dihydrolipoic acid.
- 10 3. The use as claimed in claim 2, wherein mineral salts of the
formula I are used,



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where

M is a monovalent to trivalent physiologically acceptable metal cation.

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B is a monovalent to trivalent physiologically acceptable anion.

n is 1, 2 or 3 and

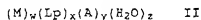
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m is 1, 2 or 3.

where the subscripts n and m correspond to the valency and charge equalization of the mineral salt of the formula I.

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4. The use as claimed in claim 1 or 2, wherein the combination used is metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes.
- 35 5. The use as claimed in claim 4, wherein the combination used is metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes of the formula II,



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where

M is a monovalent to trivalent physiologically acceptable metal cation or a mixture of monovalent to trivalent physiologically acceptable metal cations,

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Lp is racemic α -lipoic acid or α -dihydrolipoic acid, (R)- or (S)- α -lipoic acid or (R)- or (S)- α -dihydrolipoic acid, racemic α -lipoate or dihydro- α -lipoate or (R)- or (S)- α -lipoate or (R)- or (S)-dihydro- α -lipoate,

5

A is a physiologically acceptable monovalent or divalent anion,

w is 1 or 2

10

x is 1, 2, 3 or 4,

y is 0, 1, 2 or 3 and

15

z is 0, 1, 2, 3, 4, 5 or 6,

where the subscripts w, x and y correspond to the valency and charge equalization of the compound of the formula II.

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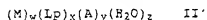
6. The use as claimed in one of claims 1 to 5, wherein the α -lipoic acid used is (R)- α -lipoic acid or the α -lipoate used is (R)- α -lipoate.

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7. A preparation comprising at least one mineral salt and (R)- α -lipoic acid or (S)- α -lipoic acid.

8. A metal α -lipoate, metal α -dihydrolipoate or metal- α -lipoic acid complex of the formula II',

30



where

35

M is a monovalent to trivalent physiologically acceptable metal cation or a mixture of monovalent to trivalent physiologically acceptable metal cations,

40

Lp is racemic α -lipoic acid or α -dihydrolipoic acid, (R)- or (S)- α -lipoic acid or (R)- or (S)- α -dihydrolipoic acid, racemic α -lipoate or dihydro- α -lipoate or (R)- or (S)- α -lipoate or (R)- or (S)-dihydro- α -lipoate,

45

A is a physiologically acceptable monovalent or divalent anion,

34

w is 1 or 2,

x is 1, 2, 3 or 4,

5 y is 0, 1, 2 or 3 and

z is 0, 1, 2, 3, 4, 5 or 6,

10 where the subscripts w, x and y correspond to the valency and charge equalization and

the following compounds are excluded:

15 $\text{Mn}(\text{Lip}^-)\text{ClO}_4$, $\text{Cu}(\text{Lip}^-)\text{ClO}_4$, $\text{Zn}(\text{Lip}^-)\text{ClO}_4$, $\text{Cd}(\text{Lip}^-)\text{ClO}_4$,
 $\text{Pb}(\text{Lip}^-)\text{ClO}_4$, $\text{Hg}(\text{Lip}_{\text{rac}})(\text{OH})_2$, $\text{Hg}(\text{DHL}_{\text{rac}}^{2-})$, $\text{Ni}(\text{DHL}_{\text{rac}}^{2-})$,
 $\text{Fe}_2(\text{DHL}_{\text{rac}}^{2-})_3$, $\text{Zn}(\text{Lip}_{\text{rac}}^-)_2(\text{H}_2\text{O})_2$, $\text{Cd}(\text{Lip}_{\text{rac}}^-)_2(\text{H}_2\text{O})_2$

where

20 Lip^- is monovalent negative racemic or (R)- or (S)- α -lipoate,

$\text{Lip}_{\text{rac}}^-$ is monovalent negative racemic α -lipoate,

25 Lip_{rac} is racemic α -lipoic acid and

$\text{DHL}_{\text{rac}}^{2-}$ is divalent negative racemic α -dihydrolipoate.

9. A preparation comprising metal α -lipoates, metal
30 α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 8.

10. A preparation comprising metal α -lipoates, metal
 α -dihydrolipoates or metal- α -lipoic acid complexes as claimed
35 in claim 5 and α -lipoic acid or α -dihydrolipoic acid.

11. The use of the metal α -lipoates, metal α -dihydrolipoates or
metal- α -lipoic acid complexes as claimed in claim 5 as
feedstuff or food supplements.

40

12. The use of the metal α -lipoates, metal α -dihydrolipoates or
metal- α -lipoic acid complexes as claimed in claim 5 in
cosmetic formulations.

45 13. A metal α -lipoate, metal α -dihydrolipoate or metal- α -lipoic
acid complex as claimed in claim 5 for use as drugs.

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14. The use of the metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 for preparing a drug for treating disorders in which lipoic acid has a therapeutic or prophylactic effect and there is a mineral salt deficiency.
15. The use of the metal α -lipoates, metal α -dihydrolipoates or metal- α -lipoic acid complexes as claimed in claim 5 in accordance with claim 14 for treating diabetes, tumors, HIV infections, AIDS, renal insufficiency, malnutrition, protein-energy malnutrition and mineral deficiencies.
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